

CLAIMS

WE CLAIM:

- 5 1. An integrated circuit fabricated on a single substrate comprising:
a data bus;
purpose-specific functional units operatively connected to said data bus, said
functional units comprising:
a JPEG decoder; and
10 a printhead interface; and
a general-purpose processor operatively connected to said data bus for controlling
said functional units, wherein said processor is operative to run software that coordinates
said functional units to receive, expand and print pages.
- 15 2. An integrated circuit according to claim 1, wherein said processor is operative to
print pages in streaming mode.
3. An integrated circuit according to claim 1, wherein said processor is operative to
print pages in single-page mode when the size of said received pages exceeds a memory
20 threshold.
4. An integrated circuit according to claim 3, wherein said memory threshold is 3MB.
5. An integrated circuit according to claim 1, wherein said processor is operative to
25 transfer bi-level color data to said printhead interface at a constant required rate.
6. An integrated circuit according to claim 1, wherein said processor is operative to
expand pages in real time during printing.
- 30 7. An integrated circuit according to claim 1, further comprising a multi-channel DMA
controller operatively connected to said data bus, wherein each of said functional units

further comprises one or more on-chip input and/or output FIFOs, and wherein each FIFO is allocated a separate channel in said multi-channel DMA controller.

8. An integrated circuit according to claim 7, wherein said DMA controller is operative
5 to interrupt said processor when a data transfer is complete.

9. An integrated circuit according to claim 1, wherein said printhead interface
comprises:

10 a line loader/format unit; and
a Memjet interface operatively connected to said line loader/format unit; wherein
said Memjet interface transfers data to a Memjet printhead.

10. An integrated circuit according to claim 9, wherein said line loader/format unit is
operative to load dots for a given print line into local buffer storage and format said dots
15 into an order required for said Memjet printhead.